Faculty and Student Perceptions of Academic Integrity at U.S. and Canadian Dental Schools

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Abstract: The issues of cheating and plagiarism in educational settings have received a large amount of attention in recent years. The purpose of this study was to assess the degree to which academic integrity issues currently exist in the dental schools throughout the United States and Canada. An online survey was developed to gather data pertaining to this topic from two key groups in dental education: faculty and students. Responses were obtained from 1,153 students and 423 faculty members. The results of the survey clearly reveal that cheating is a significant problem in dental schools and that significant differences exist between students' and faculty members' perceptions of academic integrity. The challenge for dental schools is to identify effective strategies to prevent cheating opportunities and to implement and enforce effective means of dealing with specific examples of cheating.

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Studies related to student cheating and the problems associated with this type of behavior are found in K-12 through postgraduate education.[1-14] Some students in any classroom setting will attempt to increase performance by cutting corners. For those who insist on cutting corners, cheating begins early in a student's academic career and increases as the educational demands grow. Not only does cheating appear to increase, but as different generations of students begin school, the number of students who admit to cheating has increased.[1] Research studies by Schab in 1969 and 1989 have shown that cheating behaviors have doubled from 1969, when 34 percent of students at the University of Georgia admitted to cheating, to 1989, when 68 percent of students at the same university admitted to cheating.[1]

As early as 1964, Bowers examined student dishonesty and reported underclassmen had an increased incidence of cheating compared to upperclassmen.[2] Additional research has supported Bowers's findings that there is increased prevalence of cheating, particularly among underclass male students.[3,4] Recent research findings released by the Center for Academic Integrity (CAI, report 2005) reported females are as likely to cheat as males, especially in male-dominated majors. Females have expressed the need to cheat to compete and maintain a GPA when it is known their male peers are cheating. Although underclassmen have increased levels of cheating, recent findings have also identified integrity issues in graduate school. The mechanical engineering department at Ohio University recently completed a review in which fifty-five graduate students had included material in their theses that was taken word for word from other sources.[5]

Previous research has identified other factors that might lead to cheating behaviors. Pressure to attend a prestigious college or to receive a possible academic scholarship might lead to cheating behaviors.[6] Students might also learn that, once enrolled in an academic institution, students may learn from the school environment when cheating may be appropriate.[6] This could include an understanding of the academic integrity policies as well as student views on being caught cheating and the subsequent penalty.[7] Although these previous examples provide an insight into cheating, the most noted reason for student cheating is due to an increasing influence of peers.[8] This justification appears to stem from the old adage, "Everyone is doing it; why shouldn't I?"

Students also learn when cheating behavior is met with indifference by the administration and

faculty. McCabe reported that 47 percent of students stated teachers sometimes ignore cheating.[7] The overriding reason why teachers do not report cheating is due to the administrative and bureaucratic procedures involved in pursuing cheating allegations.[7] Time is always a rare commodity in academics, and if faculty know that chasing after cheaters will take more time than presently available, it is simply easier for some faculty to look the other way. If a faculty member does decide to go through proper channels to identify a problematic student, another issue could then surface: lack of administrative action. Students who are called before the administration regarding cheating behaviors and are not punished have been found to continue similar cheating behavior, having learned their actions are not egregious enough for punishment by schools.[7]

The previously mentioned articles address high school and undergraduate institutions. Dental schools are not immune to problems associated with ethical breaches. The American Dental Association (ADA) states in its *Principles of Ethics and Code of Professional Conduct,* "the profession makes a commitment to society that its members will adhere to high ethical standards or conduct."[8] The ADA holds high standards, but research at dental schools related to ethics paints a different picture. Students' comments about cheating from a study by Koerber et al. indicate that academic dishonesty is a severe problem: "I have heard confessions of selective patient neglect, hording [sic] of preclinical materials, and witnessed cheating on tests."[9] In this same article, students' unethical behaviors are said to have developed because faculty and staff have created challenges that call into question the role of the ethics curriculum.

Ethical behaviors stretch across a wide divide of possible breaches. Cheating, of course, is one such ethical breach. A study by Al-Dwairi and Al-Waheidi completed at one dental school resulted in students identifying thirteen categories of cheating behaviors. The cheating behavior that students felt was most unethical centered on other students signing faculty names in a patient chart or having a student write a false treatment record.[10] Although these thirteen categories were identified as problem behaviors, students felt that some unethical behaviors were "better" than others. The three behaviors that were viewed as "less unethical" or "better" than others were 1) asking classmate to sign class attendance list, 2) giving help for didactic work against teacher's rules, and 3) getting help for didactic work against teacher's rules.[10]

Providing a faculty member's signature to clinical work may be viewed as more unethical than getting help for didactic work, but in a perfect world both of these transgressions would hold the same level of importance. Is it somehow possible to teach students that these behaviors are equally unethical? According to Bertolami, the answer is "no."[11] Weaknesses he identified in ethics curricula include the following: 1) clearer understanding of ethical values does not come from more education; 2) ethics curriculum is dull and uninteresting; and 3) students are not participating in active learning strategies focusing on ethics. Instead of teaching an ethics course at the end of a dental curriculum, Bertolami suggested implementing a course early in the curriculum. Ethics instruction early in the curriculum, he argues, provides students with opportunities to study and solve ethical problems while participating in an active learning environment.

Ethics is such a broad topic that curriculum development leads to many different outcomes. Individual course directors are oftentimes responsible for developing an ethics curriculum and the material for inclusion. Instead of requiring course directors to develop the curriculum, dental students could provide real world examples of ethical issues identified in the didactic and clinical setting. By directly asking students, it may be possible for instructors to tailor their courses to the issues encountered in the dental school setting. A study by Sharp et al. found that students were ethically concerned with 1) patients' limited resources, 2) disputes between professionals, 3) procedural mandates by the clinic, and 4) others making decisions for the patients.[12] Information from this study could possibly help other dental schools or faculty members to design ethics courses around research data.

Some schools have had better success dealing with ethical issues than others. When reviewing colleges, those having written codes of ethics were found to have fewer problems than schools assuming students would enter school with high ethical standards.[6] Dental schools have also used codes of ethics within their programs.[13] Included in the code of ethics was information related to professional behavior as well as consequences associated with unethical behavior. The information was provided to all students and faculty at the beginning of the academic year. Sharing the university policies on ethical breaches allows faculty members to gain an understanding of what policies are in place and what steps need to be taken if ethical concerns arise.

In order to plan proactive interventions designed to reduce the incidence of unethical behavior, dental schools might benefit from identifying characteristics that lead to cheating. One way to identify those characteristics could be the implementation of an "Institutional Ethics Audit" at academic institutions.[13] The Institutional Ethics Audit assesses 1) institutional culture of ethics, 2) policies related to ethics, 3) enforcement of ethical policies, and 4) training. Once the current level of academic integrity is identified, dental school administrators can plan, develop, and implement activities that can be used to increase ethical standards.[13]

Cheating and other unethical behaviors have been found in academic settings for some time. It takes the willingness of students, faculty, and administration to address ethics and professionalism issues instead of turning a blind eye when these areas are compromised. This article addressed issues surrounding ethics by surveying students at different levels of education from a wide variety of dental schools. The purpose of this study was to determine the extent to which academic integrity issues such as cheating and plagiarism exist in the dental schools throughout the United States and Canada. The overall study goals were to determine if there is cheating and/or plagiarism in dental schools, identify how the students cheat or plagiarize (e.g., crib sheets, technology, etc.), and explore the roles faculty and staff play in regards to cheating behaviors.

Methods

We received permission from Dr. Donald McCabe, who has conducted extensive research on cheating, to modify two survey instruments he developed that have been used in various types of educational settings. One instrument focused on assessing the faculty perception of cheating and plagiarism, while the other assessed students' perspectives. These survey instruments were adjusted to reflect content questions that would relate to dental professional education. The student survey contained a total of seventy-seven questions: seventy were Likert-type items, while the remaining seven requested responses to open-ended questions. The faculty survey included a total of seventy questions: sixty-six were Likert-type, and four were open-ended.

An invitation email was sent to the dean for academic affairs (or closest title) at sixty-two dental schools in the United States and Canada in March 2005. One dental school was omitted, as Dr. McCabe was conducting another study at that location on a related topic. The academic deans were asked to forward an email to all faculty members in their school that included information about the procedures to access an online survey form. Similarly, a second email was sent to the academic deans with the same general information targeted for students, requesting that the information be forwarded to students on how they could access the online survey.

The instructions stated that respondents would remain anonymous, that individual schools would not be identified, and that participation was strictly voluntary.

Appropriate Institutional Review Board information and approval from the University of Texas Health Science Center at San Antonio were included.

The student online survey was completed by 1,153 dental students. The online faculty survey was completed by 423 faculty members. The survey data were collected by SurveyTracker version 4.0. The responses to the Likert-type items were analyzed using quantitative techniques with SurveyTracker and SPSS version 13.0, and the open-ended comments were analyzed using qualitative techniques. The following sections describe the data analysis and results of the quantitative and qualitative data.

Quantitative Data Analysis and Results

Response Rate: Student Survey

Of the 1,153 student respondents, 491 were female (42.6 percent), and 569 (49.3 percent) were male, with ninety-three (8.1 percent) providing no indication of gender. The class years of the students were evenly distributed: first year, 311 (27 percent); second year, 322 (27.9 percent); third year, 264 (22.9 percent); fourth year, 221 (19.2 percent); with thirty-five (3 percent) no response. The survey was intentionally designed to be anonymous, meaning that individual schools would not be tracked, since it was felt that most administrations would fear that their institution may potentially "look bad" and choose not to participate in the survey. Since it was not feasible to identify which schools had responded and which had not, a followup request was sent to all academic deans as a reminder that if they had not

sent out the survey information, they were encouraged to do so.

Response Rate: Faculty Survey

Of the 423 faculty respondents, 121 (28.6 percent) were female, and 248 (58.6 percent) were male; fifty-four faculty respondents did not indicate gender. Most faculty taught primarily clinical science courses (n=281, 66.4 percent), while a smaller proportion taught basic science (n=71, 16.8 percent) and approximately 17 percent did not indicate a primary teaching area. Other demographic information, such as the academic ranks of the faculty respondents and the length of time they have taught at the university level, is shown in Table 1.

Faculty and Student Responses to the Survey

Several questions on the survey were posed to both students and faculty, thus allowing for direct comparison of their perceptions. Table 2 indicates the percentage of responses of "high" or "very high" responses by faculty and students to the specific questions, and three questions had responses of "agree" or "agree strongly." Other response options that were included in the actual survey are not displayed. These options were Medium, Low, Very Low, Don't Know, and No Response.

The results indicate several trends:

- Students' perceptions of the severity of penalties were much higher than faculty perceptions of the severity.

Table 1. Academic rank and length of time teaching at the university level of faculty respondents

	Number	Percent
Academic rank of faculty respondents		
Instructor	15	3.5%
Assistant Professor	124	29.3%
Associate Professor	132	31.2%
Professor	121	28.6%
Other	16	3.8%
No response	15	3.5%
Length of time teaching at the university level		
Less than 5 years	71	16.8%
5-9 years	64	15.1%
10-14 years	69	16.3%
15-19 years	40	9.5%
20 years or more	163	38.5%
No response	16	3.8%

- Faculty have the notion that students don't understand the university policies very well. Students feel they have a higher understanding of the policies as compared to faculty. Students also strongly feel that faculty have a higher understanding of the policies.
- The level of support of policies by students is considerably higher than perceived by faculty. Students had more confidence in faculty and student support of the policies as compared to faculty.
- Students felt the policies were more effective than did the faculty.
- Faculty ratings were higher than student ratings concerning the degree to which cheating is a serious problem at their institution.
- Faculty ratings about the student judicial process being fair and impartial were higher than student ratings.
- There is a wide difference between faculty and students in whether students have a level of responsibility for monitoring and reporting infractions of cheating.

When asked whether the respondent admitted to cheating on tests or examinations, almost 75 percent admitted to some level of that type of cheating. Table 3 shows the percentages of dental school students who admitted cheating in specific instances in the categories of Sometimes, Often, and Very Often.

Qualitative Data Analysis and Results

The open-ended comments provided by the faculty and student respondents were analyzed using a content analysis technique for qualitative data: the data were unitized, coded, and grouped into themes.[15,16] Unitizing the open-ended comments was a systematic process in which each comment, often consisting of multiple sentences, was probed to identify the different units of meaning, resulting in units shorter than a sentence to those that comprised several sentences. Thereafter, each unit was assigned a descriptive code that represented the underlying meaning. If a cluster of units suggested the same meaning, the descriptive code assigned to those units was also the same. The units that denoted common themes were then grouped and given a category name. To ensure trustworthiness, a principle of qualitative inquiry for ascertaining that the analysis and findings are legitimate,[16] two coauthors independently com-

Table 2. Comparison of faculty and student responses

Survey Questions	Percentage of Responses		
	High	Very High	Combined High and Very High
Agree with the appropriateness of the severity of penalties for cheating at your university?			
Faculty	18.9	9.5	28.4
Students	32.4	24.0	56.4
The average student's understanding of policies concerning cheating?			
Faculty	22.7	9.0	31.7
Students	33.4	17.8	51.2
Faculty's understanding of these policies?			
Faculty	23.6	11.1	34.7
Students	37.1	26.5	63.6
Student support of/agreement with these policies?			
Faculty	22.0	8.7	30.7
Students	35.0	14.7	49.7
Faculty support of/agreement with these policies?			
Faculty	27.9	14.2	42.1
Students	39.0	23.9	62.9
The effectiveness of these policies?			
Faculty	11.8	3.1	14.9
Students	24.1	13.8	37.9
	Agree	Agree Strongly	Combined Agree and Agree Strongly
Cheating is a serious problem at my university.			
Faculty	29.3	10.2	39.5
Students	19.3	11.6	30.9
Our student judicial process is fair and impartial.			
Faculty	35.0	11.1	46.1
Students	25.6	7.4	33.0
Students should be held responsible for monitoring the academic integrity of other students.			
Faculty	43.0	24.8	67.8
Students	32.0	14.7	46.7

pleted the analysis and subsequently compared the themes they individually identified. A few discrepancies in the identified themes were noted, and the associated data were reanalyzed until both coauthors agreed on the themes.

Theoretical saturation, where "successive examination of sources yields redundancy and that the data you have seem complete and integrated,"[17] was observed in that the same themes emerged and were repeated across the comments received. These themes often surfaced in different questions and were consistent across the questions. Triangulation of the data—investigating whether similar themes emerge from different sources, another method used in quali-

tative inquiry to ensure trustworthiness[16]—occurred among identified sources in the literature, the faculty comments, and the student comments. That is, student and faculty comments mirrored the literature, and the student and faculty comments, when analyzed, shared the same themes although from differing perspectives.

The following sections report the results of the analysis of the faculty and student open-ended comments. While the full range of comments is beyond the scope of this article, the major themes identified and the samples of the comments are included. The student comments are discussed first, followed by faculty comments.

Table 3. Frequency of cheating admitted by dental school students (n=1153)

Survey Item	Sometimes	Often	Very Often	TOTAL
Cheating on tests or examinations	23.6%	28.1%	23.0%	74.7%
Cheating on preclinical exams or assignments	23.2%	26.8%	18.4%	68.4%
Cheating during tests or examinations	28.1%	15.8%	13.0%	56.9%
Cheating during preclinical exams	26.4%	13.0%	9.1%	48.5%
Cheating during preclinical assignments	28.6%	16.7%	12.2%	57.5%

Students' Open-Ended Comments

Students made comments related to questions concerning 1) how students learned about cheating policies, 2) cheating in areas other than testing and the methods used, 3) rationale for cheating, and 4) suggested changes to control cheating. The responses to why students cheat were similar to the perceptions of faculty; however, the number and variety of student responses exceeded those of faculty in several categories.

How Students Learn About Cheating Policies. The majority of students who commented said they were told about or given information on institutional policies about ethics, cheating, and academic integrity. Those that knew of the policies listed a variety of information sources including syllabi, orientation programs, honor council participation, and investigations of cheating episodes. Some sample quotes pertaining to this issue from the open-ended questions are:

- "It is listed in every syllabus."
- "The orientation program at my school included an hour-long session about academic ethics where faculty thoroughly described the policies."
- "During a cheating investigation the policies of the school became very apparent."

However, a relatively small group of students did not know of any policy or felt it was not addressed at all. For example:

- "I know there are policies. I have no idea what they are."
- "We never received a hard copy of the handbook which would help us to be more knowledgeable about the penalties. We never receive classes about integrity."

Rationale for Cheating. Approximately one third of the respondents indicted that they have not cheated or gave an N/A for a response. Reasons cited were either related to personal integrity or the fear of consequences if caught. For example:

- "Never have, never will, besides the person next to me probably knows less than I do."
- "I can't. My stomach is directly related to my guilt. Not worth it."
- "I have never cheated and would never cheat—it cheapens the validity of my degree and, worst of all, could potentially harm my patients whom I would treat with my 'education.'"

On the other hand, an area in which student responses closely paralleled those of faculty included the belief that the administration either did not enforce policies or backed down on enforcing policies when challenged. Students who were caught were not punished or were simply given a slap on the wrist. Some students noted this was due to fear of developing a negative school image, fear of litigation, or "connections" by parents. For example:

- "About a dozen different people have been caught cheating. There has not been a single punishment handed down to any of them. What does this tell the student body? You might as well cheat until you get caught, because nothing will actually happen to you if you do."
- "Although there is an academic policy at the university, it is not enforced at all, even despite numerous efforts of students with integrity and honesty who saw cheating occur . . . and who brought the evidence to school administrators. . . . Nothing ever occurred."
- "It is not a matter of understanding the policy. . . . The true issue is that when cheaters get caught, schools are too worried about image to actually do what they say they're going to do. The message is more powerful than the smokescreen of words. . . . This tells me that if I cheat and play dumb and threaten the school a little they'll fold."

Another dominant theme that emerged as a motivation for cheating related to the stress, pressure, and workload associated with the dental school curriculum. Students felt that faculty expectations

and amount of information they were required to learn were often overwhelming. The emphasis on grades as the primary criterion to get into specialty areas after graduation was another source of stress. For example:

- "If you believe that there is a compromised integrity in this school, as many of us do, then I think it would be good to examine the pressures we are under. . . . Many of the students are moral and good people, but everyone has limits and this place will push the limits."
- "Pressure, plain and simple. Where you find students under pressure to do extremely well and to do 'too much at one time' you will find cheating. Every time."

Students also stated they were motivated to cheat because "everyone does it." If their peers cheat, students felt they were placed at a disadvantage by not cheating. For example:

- "Do you really need to ask that question? COME ON. Here is one for you. Everyone else is doing it."
- "If I saw someone taking unfair advantage, I would want access to that advantage as well."

Students felt compelled to help their friends. Student comments in this area focused on the theme of peer pressure, friendship, and concern for the problems of other students. For example:

- "If I were to perform this act, it would be to help out a classmate who was struggling."
- "Once I let a fellow student pass off a wax tooth of mine as his own because life was really rough for him; at that time, I saw it as helping him in an overly stressful situation."

The situational category covered a wide gamut of reasons. Much of this situational or circumstantial ethics centered around the instructor's attitude, the student's perception of the significance of the assignment or quiz, and clarity of instructions as to what he or she considered cheating. Some students flat out said that they cheated because they did not agree with the definition of cheating as it was defined in the policies or syllabi. For example, "I never cheat if I consider it cheating. However, I don't always agree with what is defined as 'cheating.'"

Some students defined when it was acceptable to cheat and when it was not: "All situations I've participated in have been because it doesn't seem to me that it makes a difference in the long run. Most of my situations have been related to lab work and in those situations I feel that what I'm doing is still my work but I'm modifying the conditions slightly."

Those who admitted to cheating felt that shortcuts of whatever type that alleviated pressure or stress were justifiable.

Students did not feel that working together as a group on an assignment that was supposed to be done individually was cheating. The rationale used was that, in the real world, people work together to solve problems. For example:

- "I don't think collaborating on take-home tests is necessarily cheating. I think it provokes discussion for the betterment of the class. The point is to learn."
- "In a real work situation people work together; this is not wrong."

Students also felt that using old reports to see how research projects had been completed previously by other students was not cheating. They felt that studying from old exams released in test files was not cheating unless these were available only to a limited few. If files were available to all, then it was not cheating to use these. For example:

- "Getting a copy of old exams not released to the rest of the class by the professor."
- "There is a huge double standard implemented by the faculty of my school. They often get upset at us for using old tests to focus our studying; however, they ask us to memorize questions on National Boards to help the classes below us."

Students also commented that the levels of cheating were often related to perceptions about the significance of the course or assignment. Cheating on coursework with less significance meant a lower degree of severity on the integrity barometer, as well as cheating on coursework perceived to be "busy work" or unfair. For example:

- "It depends. If it is some kind of assignment that we often refer to as 'busy' work, then maybe it's not as big of a deal. But for example, cheating on a major project or large assignment is more serious in nature."
- "The times I have cheated would be related to courses that I feel are 'worthless' in the grand scope of my dental career. I would never cheat on an actual exam in ANY course, but on take-home assignments, if I didn't have time to complete it due to a job I had or something else, I didn't feel too awful getting help from a friend to finish it. I felt these courses were just a filler (like epidemiology)."

Cheating in Areas Other Than Testing and the Methods Used. Students reported a variety of ways they cheated. They were much more descriptive than faculty in explaining how electronics aid cheating

during an examination. They listed text and instant messaging, telephones, PDAs, pagers, and calculators. For example:

- "Students calling other students for answers to exams from cell phones in bathrooms."
- "Actually resting one's head on their phone in the palm of their hand as their friend does the same, then they whisper answers."

Furthermore, they relied on electronics to copy current examinations for future use. For example:

- "10 students each using camera cell phones, taking one picture of one page of an exam at varying times in an exam, then collaborating and putting them into a Word document to distribute to the next year's class."
- "Also TAs who help proctor the exam photocopying the exam and distributing the document . . . to their 'select' group of friends. Usually of the same race, ethnicity."

Students indicated that the "traditional methods" of cheating on lecture examinations included use of crib sheets and notes written on clothing or body parts, directly copying answers, and using codes. Answers were written inside coffee mugs, on shoes, on the underside of a cap, in a cold medicine box, on an eraser, on top of book bags, and in bathroom stalls. The codes used to give out answers included tapping fingers or pencils, hand signals, noises, or scratching of specific body parts. In addition, one student may take the exam early and then give out questions to classmates or take an exam for a friend. For example:

- "Putting small font answers behind the water bottle logo so that the water magnified the answer so that the person could read every time they drank."
- "Most of the time I just see people looking at other people's answer sheets."

In preclinical/labs, students cheated by paying others either within the school or outside of it to do the work. Students said that there was switching of prepared teeth before the exam or use of a single tooth by many people in pre-lab exercises. Students cheat on projects by signing off on each other's project using faculty signatures. For example:

- "Taking your projects to a lab to be completed rather than doing them yourself."
- "People do others' lab work for money."
- "For preclinic 1st year, one student from another session obtained an extra tooth to do a wax up on and passed it on to his friend in the next session who submitted the waxed-up tooth for final grading."

There were only a few responses pertaining to patient-related cheating. These included performing unnecessary procedures or delaying procedures until a future class just to meet clinical requirements. For example: "During unsupervised clinical sessions (i.e., free clinics) some students perform unnecessary treatments on patients to maximize clinical requirements. Very unethical."

Suggested Changes to Control Cheating. The student responses regarding changes needed to reduce cheating represented a continuum that ranged from none to implementing many changes. For example, some students commented that their schools do well in the area of academic integrity:

- "I think our school does a great job of protecting academic integrity."
- "I didn't even know there was a problem with cheating at this level."

However, others specified that many actions were needed to reduce cheating. Student comments that reflect these themes are listed in four categories:

1) Enforce policies/take disciplinary action. The comments here reflect the belief that the policies that are in place should be enforced and that there should be significant consequences for those who are caught cheating. For example:

- "Actually follow the enforcements that are listed in the handbook for students caught cheating. Come down hard on cheaters; we had 10 accounts against the same student in writing and signed . . . nothing happened."
- "I feel that, at this level of education, cheating should be viewed as an automatic forfeit of the student's tuition and the student(s) involved should be dismissed from the university."

2) Write new exam questions yearly. The faculty came under criticism as contributing to cheating primarily in the area of examinations. Some students commented that there was a double standard about use of old exams to study from. Most felt that if one person had access to old test files then all students should. Others noted that instructors should not be using the same exams year after year. Students faulted faculty for not making up new tests and for perpetuating the ability to study and pass exams by doing nothing but studying the old tests. For example:

- "The professors should REWRITE every exam EVERY year. . . . that's why we PAY them."
- "Students in my school have a tradition of passing down class notes and copies of old exams (some handed out freely by instructors, other from uncer-

tain origins). . . . Many instructors know about the notes and still give exams that are word-for-word copies of exams."

- "Institutionally accepted cheating includes the sale of test files. Professors need to either write new exams or not to release them. If I didn't buy a test file, then I'm at a disadvantage to the rest of the class."

3) Raise awareness of ethics. Some students felt that there needed to be additional discussion or elaboration of ethics policies. For example:

- "I would like to see the school set up some guidelines on what is acceptable and what is unacceptable and the consequences for each."
- "Please, please, please fabricate an honor code."

4) Change the testing environment. Students noted that there should be increased surveillance within the testing area to help discourage cheating. Suggestions included changing seating arrangements, videotaping, or having specific rooms designed for testing. Several comments also addressed increasing the number of proctors/faculty and clarifying their role in preventing cheating. For example:

- "Proctors should be instructed to actually monitor the students during exams instead of playing cell phone games."
- "If teachers cared, they would space us out in the classroom and really monitor us."
- "Exam room should be videotaped for analysis. Student should be encouraged to report anonymously via website. . . . this information should be used to confirm with videotape."

Role of Students in Academic Integrity. Students were divided on whether they should assume an increased role in controlling cheating. While some favored an increased role, many students who disagreed cited potential consequences from peers and unwillingness to take on the responsibility for monitoring friends. They frequently assigned that responsibility to faculty. Those who favored an increased role commented: "I would like to see students join together to suppress and report cheating"; "Students SHOULD be involved with the punishment like a judicial board"; and "Students should be asked and encouraged to report any incidence of cheating." However, those who disagreed stated:

- "I don't think it's right to have students accept the responsibility of having to monitor cheating practices in class. It forms a hostile environment in the class. It turns the whole experience into a Salem Witch Trial."

- "You either participate so that you can survive or rat them and live with hell because everyone knows that you are the rat."

Faculty Members' Open-Ended Comments

Faculty made narrative comments in four questions pertaining to 1) ways to improve policies related to academic integrity, 2) the role of faculty in promoting academic integrity and controlling cheating, 3) factors contributing to cheating/plagiarism, and 4) how cheating issues are handled within the institution. After analyzing the data, three major themes emerged: factors that contribute to cheating behavior, general lack of support, and policies.

Factors That Contribute to Cheating Behavior. Environmental factors, ethics and integrity of students, and the need for reform in the dental curriculum surfaced as three major factors that contributed to cheating behavior. Environmental factors that facilitate cheating focused on electronic technology (cell phones with camera and text messaging capabilities and PDAs) and the testing process. For example:

- "Recognize how new technology facilitates some kinds of cheating . . . cell phones used to photograph exams and relay answers, text messages convey answers, PDAs contain entire textbooks."
- "All [faculty] are aware of potential for misuse of PDAs, cell phones."

Parts of the testing process that were targeted by faculty included the exams themselves, the testing environment (large classes and crowded classrooms), and faculty monitoring. Some representative faculty comments are:

- "Use different versions of exams, exams with randomly distributed questions."
- "Reusing exams."
- "Poor tests, poor teachers."

Eroding ethics and integrity of students addressed both societal influence and personal beliefs that may or may not stem from a specific culture. For example:

- "The ever increasing acceptance of the idea that if 'I benefit' from the action or decision, then the effect on other people or whether it is illegal or immoral is of no concern."
- "Students that cheat think it's OK if they don't get caught."
- "Multicultural students with varying degrees of perception of our standards."

The need for reform in the dental curriculum was addressed by only a few faculty. For example:
- "Level of achievement is emphasized far more than level of learning or obtaining skill in the progression."
- "The cultural pressure to compete must be replaced very early in the dental education process with an understanding of the responsibilities of professional ethics. Students learn that it is no longer 'I win/you lose,' but everyone wins or everyone loses."

General Lack of Support. A second major area of faculty comments across all questions focused on the general lack of support at any level for decisions about cheating. This excerpt summarizes these comments: "Students must be treated fairly and receive due process. On the other hand, university council must take a firm stand with administrative approval to act definitively when such charges are brought to their attention. Without followthrough, the entire process becomes a joke in the eyes of everyone."

Whether at a dean's level or upper administration, lack of administration support was felt to be a major contributory factor to continuation of cheating behaviors. Faculty felt that there was little or no effort to enforce policies that punish or remove students who have been found to be cheating or that the administration counteracted disciplinary decisions due to fear of litigation. For example:
- "Administrators are more concerned about pleasing students and maintaining tuition fee levels than imposing good ethics."
- "The dean is afraid of touching it—does everything possible to avoid confronting cheating by students."
- "Little or no consequences to cheating, stealing, or lying. . . . The administration will not act and abrogates its responsibilities to protect the public."
- "Student had things written on hand. Administrator believed her story of that's how she studied and just didn't wash her hands!!"
- "We had several convictions and recommended dismissal of the students three times. In all cases the student was granted a lesser disciplinary action by our administration. . . . This lack of backbone by our administration, I believe, undermined the willingness of faculty to bring charges and disgusted honorable students."

Furthermore, lack of information about cases that were investigated was described by some faculty.

For example:
- "Because of campus policy, faculty accusers are not allowed to know the outcome of the investigation or of the sanctions imposed. Because of school policy the honor system is finished. . . . The system is completely dysfunctional."
- "Any types of actions are seemingly protected under privacy laws so students and faculty never really hear the outcomes that would reward faculty that they 'did the right thing' and provide an example to the students."

The following quotes summarize the underlying perceptions of many faculty respondents related to handling of ethics violations by dental school administration:
- "When students believe that the faculty does not care about cheating, it becomes rampant. When students witness small consequences for cheating, they do not respect the administrators. . . . When students recognize that cheating WILL result in expulsion, no question, they are less likely to do it."
- "It will take a change of corporate philosophy for there to be any change. Faculty know who the cheats are in the didactic and preclinical courses and those who 'game' the system in the clinical years. After many years of trying, it is obvious that the administration wants nothing to do with changing this status quo; the inmates/students are running the asylum/school."

Policies. In comments related to the policies about cheating or issues of academic integrity, faculty felt that communication of existing policies, and the enforcement of them, was important. They felt there was a need to communicate the policies as well as a need for consistent, enforced policies with severe punishment for those who cheat. For example:
- "Clearly delineate and enforce policies."
- "Get a backbone."
- "Take stricter line on cheaters. . . . it is overlooked, especially in foreign students."

There were a large number of comments that dealt with making sure the information that dealt with policies about cheating was available to both faculty and students and that it was routinely discussed. For example:
- "Discuss policies with faculty and solicit faculty input. . . . been at this college for 5 years and yet to hear a discussion of college policy and procedures for violations of academic integrity."
- "Make sure foreign students understand the rules."

- "Lack of willingness to address this issue by faculty is regarded as 'it's okay to cheat' by students."

Faculty felt that students and faculty should be more actively involved in creation of policies and in reporting cheating incidents. For example:

- "Students should hold more responsibility for preventing cheating . . . write and sign a statement on every exam and piece of work that they pledge his or her honor they complied with university rules."
- "Involve students in development of the policy/honor code and make them the primary body responsible for bringing a student before a student-run sanction board. This is what it will be like in practice . . . their colleagues will hold them accountable."

Discussion

This study was designed to assess the degree to which academic integrity issues such as plagiarism and cheating currently exist in the dental schools throughout the United States and Canada. The open-ended comments provided by the faculty and students provide relevant insights into this complex issue. Furthermore, these comments provide implications for practice. We recognize that understanding how students cheat and why they cheat can help guide the development and implementation of new policies on academic integrity or the modification of existing policies. This information can also help faculty and administrators develop academic practices that decrease the opportunity or stimulus for academic dishonesty. Therefore, in this section, we offer a set of implications for practice that are directly tied to the research questions.

Information, Policies, and Actions Governing Academic Dishonesty

Responses to the questions indicate that students learn about policies on academic dishonesty from a variety of sources including orientation presentations, syllabi, faculty, honor councils, and investigations into alleged instances of cheating. To reinforce the tenets of the academic policy, students should:

- Be reminded each semester about ethics/integrity/cheating.
- Have orientation or other activities in which key members of faculty and administration explain the importance of ethics, the policies, and consequences so that students recognize the importance of ethical behavior.
- Be provided definitions of activities considered as cheating.
- Sign an honesty pledge.
- Be involved in the honor council activities.

Students felt that a policy on academic dishonesty should:

- Define activities that are considered cheating.
- Specifically outline consequences.
- Provide better guidelines for faculty on what to do if they suspect cheating.
- Not penalize those reporting and make it easier for students to report instances of cheating.

Students want the administration to enforce existing academic policies by:

- Having faculty that monitor activities and support reporting.
- Following through with actions described and not backing down.
- Giving fewer warnings, more disciplinary action.
- Making consequences count: expel, punish, reprimand.
- Providing consistent consequences with no favorites.

Faculty and administrators need to be aware of the signals they send about acceptability of academic dishonesty when they do not enforce policies.

Cheating and Plagiarism Behaviors Students Exhibit and How to Address Them

Methods of cheating span both the traditional and the more sophisticated electronic types. Phones with text messaging capabilities and electronics allow students to share information freely during an examination. Phones with cameras allow students to copy question during the examination or when the examination is posted. Students can electronically steal copies of the exam from the testing area. The traditional ways of writing answers on crib sheets, on body parts, in bathroom stalls, on backpacks, shoes, under the bill of baseball caps, and on coffee mugs or water bottles are still used, as are codes based on tapping, hand signals, and noises.

Students made multiple suggestions on how to cut down on academic dishonesty. In particular, they indicated that faculty need to:

- Stop using old exams. Students can memorize questions and recreate the exam for others to study from, remove a page from the exam, or use camera phones to copy pages.
- Write new questions yearly.

From the comments, it appears that altering the testing environment would help to decrease some of the methods of cheating. The administration may want to consider:

- Increasing the number of proctors.
- Having faculty take a more active role in proctoring.
- Avoiding student proximity in the classroom.
- Providing specific testing areas/rooms that can be more easily monitored.

The number of comments about the stress of the dental curriculum in fostering cheating may be an impetus to reevaluate some procedures such as:

- The use of individual assignments when group assignments may be a better representation of how "real world" knowledge is gained.
- Ways to determine if a student's work is his or her own.
- Faculty sign-off on procedures.
- Clinical requirements for number of procedures on patients or for placement of procedures within a specific course.

Degrees of Severity Associated with Specific Cheating and Plagiarism Behaviors

Students justify cheating in many ways, and much of it falls into a situational ethics scenario. Students justify cheating by whether they consider the work pertinent to the degree or class or whether they consider it "busy work," the instructor's attitude and specific instructions, whether the action helps alleviate the pressure of workload, or peer pressure.

These distinctions can differ from those of faculty and/or administration. These differing interpretations make it imperative to have clear-cut definitions within the policies for academic integrity. In addition, there should be a mechanism or activities that allow students to recognize their responsibility in self-monitoring of academic dishonesty, the establishment and maintenance of professional ethics among peers, taking a stand and reporting instances of cheating, and being involved in development of policies and in the body that reviews instances of alleged academic dishonesty. However, in attempting to increase the role of students in monitoring academic dishonesty, the administration and faculty need to be cognizant of the peer pressure/peer consequences involved in asking students to become involved in reporting. Action should be taken to reduce these consequences as much as possible.

Conclusions

The results of the survey used in this study involving dental schools from the United States and Canada indicate that cheating and plagiarism are major issues that threaten the academic integrity of our teaching institutions. Dental school administrators and faculty need to work together to address these issues and develop strategies for combating cheating activities. Students are creative in developing cheating techniques, and faculty members need to be aware of these techniques. The availability of new technological tools has given students more creative ways to cheat on examinations.

Study results identified several factors that contribute to cheating behavior. Faculty members have perspectives on cheating activities that are different from the perspectives of students. Faculty reported numerous comments pertaining to the institutional policies relating to cheating and the lack of administrative support in enforcing those policies. Administration is viewed by students as not taking a firm stand against instances of cheating and not being consistent in developing or enforcing related policies.

The outcomes of this study were not to identify cheating behaviors at specific institutions, but to provide a systematic overview of the attitudes and activities related to cheating in these professional schools. Faculty and administrators can gain value in considering the implications for practice as to the areas where efforts for improvement have the potential to result in positive outcomes.

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